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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LERNER, MARTIN

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 04/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/392,844

Applicant(s)

AUGUST ET AL.

Examiner

Martin Lerner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 to 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 5 to 7, 9, 15 and 20 are rejected under 35 U.S.C. 102(a) as being anticipated by *Ferrell*.

Regarding independent claim 1, *Ferrell* discloses an interactive speech and language training system, comprising:

“a first module configured to convert input text to audible speech in a selected language, the audible speech being patterned after a model” – speech synthesizer 74 forms an audio representation of the vocabulary elements; vocabulary library 68 include recorded digitized representations of vocabulary elements (“models”) (column 7, lines 40 to 45: Figure 3); a vocabulary element, such as a word or phrase is presented both

visually and aurally to the individual in a native language or a non-native language (column 4, lines 33 to 57: Figures 1 and 4);

“a user interface configured to receive utterances spoken by a user in response to a prompt to replicate the audible speech” – a vocabulary element is presented both visually and aurally to the individual (“a prompt”), and the individual is given a period of time to initiate a response; the user’s response is received; for example, the user may pronounce the vocabulary element (column 4, line 44 to column 5, line 10: Figure 1: Steps 12 to 14; Figure 4);

“a second module configured to recognize the utterances and provide feedback to the user, the feedback being comprised of a confidence measure reflecting a precision at which the user replicates the audible speech in the selected language based on a comparison of the utterances to one of the audible speech and the model” – the responses are evaluated for correctness and appropriate feedback is presented to the user based on the correctness of the response; in the preferred embodiment, the feedback includes both visual and aural feedback; visual feedback is provided by a needle gauge at the bottom of the screen which indicates the degree of correct pronunciation (“confidence measure”)(column 5, lines 8 to 25: Figure 1; Steps 18 and 20); icon 84 provides visual feedback in the form of a confidence meter which indicates the correctness of a user response (column 8, lines 1 to 3: Figure 4).

Regarding claims 5 and 6, *Ferrell* discloses vocabulary library 68 (“files for storing model pronunciations”) includes digital representations of vocabulary elements

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(column 7, lines 40 to 45: Figure 3); a vocabulary element may be a phoneme ("phoneme model"), word, sentence, or paragraph; the aural presentation preferably includes a synthesized utterance corresponding to the vocabulary element; the user may pronounce the vocabulary element (column 4, line 40 to column 5, line 10: Figure 1: Steps 12 to 14).

Regarding claim 7, *Ferrell* discloses the presentation is divided into multiple lessons incorporating new vocabulary elements (column 4, lines 55 to 57; column 5, lines 26 to 36: Figure 2).

Regarding claim 9, *Ferrell* discloses unfamiliar vocabulary elements are introduced with a definition ("dictionary files")(column 5, lines 33 to 36: Figure 2).

Regarding claim 15, *Ferrell* discloses vocabulary library 68 ("specific pronunciation files") includes digital representations of vocabulary elements (column 7, lines 40 to 45: Figure 3).

Regarding claim 20, *Ferrell* discloses icon 84 provides visual feedback in the form of a confidence meter, which indicates the correctness of a user response (column 8, lines 1 to 3: Figure 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 to 4 and 16 to 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ferrell* in view of *Henton*.

Concerning independent claim 16, *Ferrell* discloses an interactive language training system, comprising:

“a first module configured to convert input text to audible speech in a selected language, the audible speech indicative of a model” – speech synthesizer 74 forms an audio representation of the vocabulary elements; vocabulary library 68 include recorded digitized representations of vocabulary elements (“models”) (column 7, lines 40 to 45: Figure 3); a vocabulary element, such as a word or phrase is presented both visually and aurally to the individual in a native language or a non-native language (column 4, lines 33 to 57: Figure 1);

“a user interface configured to receive utterances spoken by a user in response to a prompt to replicate the audible speech” – a vocabulary element is presented both visually and aurally to the individual (“a prompt”), and the individual is given a period of time to initiate a response; the user’s response is received; for example, the user may pronounce the vocabulary element (column 4, line 44 to column 5, line 10: Figure 1: Steps 12 to 14; Figure 4);

“a third module configured to recognize the utterances and provide feedback to the user, the feedback being comprised of at least one of a score, an icon and an audio segment reflecting a precision at which the user replicates the audible speech in the selected language based on a comparison of the utterances to one of the audible speech and the model” – the responses are evaluated for correctness and appropriate

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feedback is presented to the user based on the correctness of the response; in the preferred embodiment, the feedback includes both visual and aural feedback; visual feedback is provided by a needle gauge at the bottom of the screen which indicates the degree of correct pronunciation ("confidence measure")(column 5, lines 8 to 25: Figure 1; Steps 18 and 20); icon 84 provides visual feedback in the form of a confidence meter which indicates the correctness of a user response (column 8, lines 1 to 3: Figure 4).

Ferrell discloses visually displayed vocabulary elements ("input text")(Figure 4), but omits:

"a second module synchronized to the first module, the second module producing an animated image of a human face and head pronouncing the audible speech."

However, *Henton* teaches a method and apparatus for synthetic speech in facial animation, suggesting that it is well known to synchronize facial imaging with synthetic speech for the purpose of instructing the user. (Column 3, Lines 33 to 39: Figure 3) It would have been obvious to one of ordinary skill in the art to include a facial animation module in *Ferrell* that synchronizes imaging with synthetic speech as taught by *Henton* because it is well known to utilize facial animation synchronized with synthetic speech in various applications including user instruction.

Concerning independent claim 17, *Ferrell* discloses an interactive language training method, comprising:

“converting input text data to audible speech data” – speech synthesizer 74 forms an audio representation of the vocabulary elements (column 7, lines 40 to 45: Figure 3);

“generating audible speech comprising phonemes based on the audible speech data” – a vocabulary element may be a phoneme (“phoneme model”) (column 4, lines 44 to 47: Figure 1: Steps 12 to 14);

“outputting the audible speech through an audio output device” – aural presentation of vocabulary elements utilizes speakers 76 (column 7, lines 37 to 39: Figure 3);

“prompting the user to replicate the audible speech” – a vocabulary element is presented both visually and aurally to the individual (“a prompt”), and the individual is given a period of time to initiate a response; the user’s response is received; for example, the user may pronounce the vocabulary element (column 4, line 44 to column 5, line 10: Figure 1: Steps 12 to 14; Figure 4);

“recognizing utterances generated by the user in response to the prompting” – speech recognition device 70 utilizes microphone 72 to capture and analyze audio input from the user (column 7, lines 17 to 19: Figure 3);

“comparing the audible speech to the utterances” – the responses are evaluated for correctness (column 5, lines 1 to 10; Figure 1; Step 18);

“providing feedback to the user based on the comparison, the feedback comprised of at least one of a score, an icon and an audio segment reflecting a precision at which the user replicates the audible speech” – in the preferred

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embodiment, the feedback includes both visual and aural feedback; visual feedback is provided by a needle gauge at the bottom of the screen which indicates the degree of correct pronunciation (“confidence measure”)(column 5, lines 8 to 25: Figure 1; Steps 18 and 20); icon 84 provides visual feedback in the form of a confidence meter which indicates the correctness of a user response (column 8, lines 1 to 3: Figure 4).

Ferrell discloses visually displayed vocabulary elements (“input text”)(Figure 4), but omits:

“generating an animated image of a face and head pronouncing the audible speech” and “synchronizing the audible speech and the video.”

However, *Henton* teaches a method and apparatus for synthetic speech in facial animation, suggesting that it is well known to synchronize facial imaging with synthetic speech for the purpose of instructing the user. (Column 3, Lines 33 to 49: Figure 3) It would have been obvious to one of ordinary skill in the art to include a facial animation module in *Ferrell* that synchronizes imaging with synthetic speech as taught by *Henton* because it is well known to utilize facial animation synchronized with synthetic speech in various applications including user instruction.

Concerning claim 2, similar considerations apply.

Concerning claim 3, *Henton* teaches a face and head, which is a “transparent” line drawing (Figure 3).

Concerning claim 4, *Ferrell* must implicitly include at least a volume control for speakers 76.

Concerning claim 18, *Ferrell* discloses lessons (Figure 2) and vocabulary library 68 (Figure 3); these are “stored lesson files” as software in memory of processor 60 (column 7, lines 14 to 25: Figure 3).

Claims 8 and 11 to 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ferrell* in view of *Mostow et al.*

Concerning claim 8, *Ferrell* does not expressly disclose that the input text is based on data received from a source outside the system. However, *Mostow et al.* teaches a related reading and pronunciation tutor involving speech recognition, where an external application such as a tutor for another domain, may dynamically supply text for the tutor to help the user to read. (Column 8, Lines 59 to 61: Figure 1) It would have been obvious to supply the input text from a source outside the system in the interactive language instruction system of *Ferrell* as suggested by *Mostow et al.* for the purpose of providing more flexibility in lesson content.

Concerning claims 11 to 13, *Ferrell* omits tables storing mapping data between word subgroups and vocabulary words, between words and vocabulary words, and between words and examples of parts of speech. However, *Mostow et al.* teaches a related reading and pronunciation tutor where an automatic enhancement function includes a heuristic algorithm using tables. Lookup of information in tables identifies sets of words that rhyme with one another, words that look alike, start or end the same etc., by constructing a key for each word that says what set is that word’s equivalence class. The word may also be decomposed into its root word and affixes, which implicitly

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involves identification of the word's part of speech (Column 9, Line 52 to Column 10, Line 33) It would have been obvious to one of ordinary skill in the art to include tables of related words as taught by *Mostow et al.* in the interactive language instruction system of *Ferrell* for the purpose of inferring the pronunciation of words not found in a dictionary.

Concerning claim 14, *Ferrell* omits tables of punctuation, but *Mostow et al.* teaches that the tutoring function takes account of phrase boundaries as indicated by commas and certain other punctuation for the purpose of more accurately aligning recognition results against the text. (Column 5, Lines 11 to 22) It would have been obvious to one of ordinary skill in the art to include a table of punctuation indicating phrase boundaries in the interactive language instruction system of *Ferrell* for the purpose of more accurately aligning recognition results against the text as taught by *Mostow et al.*

Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ferrell* in view of *Henton* as applied to claim 17 above, and further in view of *Adams, Jr. et al.*

Ferrell omits a record and playback module for providing playback of selected portions of audible speech and utterances from the user. However, *Adams, Jr. et al.* teaches a related system and method for interactive reading and language instruction including a session database for replay and resumption containing all the information necessary to provide a replay of the joint reading of the text by the companion and the

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student. (Column 4, Lines 17 to 29: Figure 2) Throughout the lesson the audio inputs from both the student and the computer instructor, along with the text as displayed for utterance by each party, are stored at the session database. *Adams, Jr. et al.* suggests that this enhances the learning experience by identifying areas for concentrated effort in the future. (Column 7, Lines 45 to 51) It would have been obvious to one of ordinary skill in the art to include a record and playback module in the system and method for interactive language training of *Ferrell* as suggested by *Adams, Jr. et al.* for the purpose of enhancing the lesson learning experience by identifying areas for concentrated effort.

Response to Arguments

Applicants' arguments have been considered but are moot in view of the new grounds of rejection.

Conclusion

Applicants' amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-9064. The examiner can normally be reached on 9:30 AM to 6:00 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



ml
April 15, 2002



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